The State of New Hampshire
Department of Environmental Services

Michael P. Nolin
Commissioner

LETTER OF DEFICIENCY
WD WWEB/C 06-03

March 9, 2006

Sidney Baines, Chairman
Board of Sewer Commissioners
Town of Hooksett
1 Egawes Dr.
Hooksett, New Hampshire 03106-1814

Subject: National Pollutant Discharge Elimination System (NPDES)
Compliance Sampling Inspection (CSI)
Hooksett Wastewater Treatment Facility (WWTF), NPDES Permit # NH0100129

Dear Mr. Baines:

On February 2 and 3, 2006, as a representative of the Department of Environmental Services, Water Division, Wastewater Engineering Bureau (DES), Stephanie Larson conducted a NPDES CSI at the Hooksett WWTF. Objectives of a CSI include determining compliance with NPDES permit conditions, verifying accuracy of permit required information and adequacy of permittee sampling and monitoring. The following people were present during this CSI:

Bruce Kudrick, Superintendent, Hooksett WWTF
Brian Taylor, Lab Director, Hooksett WWTF
Stephanie Larson, Environmental Inspector, DES

Included are copies of EPA's Water Compliance Inspection Report Form 3560-3 and a copy of the sample results for the compliance sampling event. The laboratory results for *Escherichia coli* (E. coli), Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS) were within the allowable permit discharge limitations.

The deficiencies and observations/recommendations DES observed during the CSI are summarized as follows:

DEFICIENCIES (Response Required):

1) Discharge Monitoring Reports (DMRs)
   a) Hooksett personnel do not include their NPDES permit number on all correspondence and reports submitted to DES and EPA. Personnel must begin including this on all submittals.

2) pH
   a) Standard Methods, Method 4500-H^+ B is referenced as your method of analysis. However, personnel follow the procedures in EPA method 150.1. Personnel should change their benchsheet and Quality Assurance/Quality Control (QA/QC) manual to show this. I have also included a copy of EPA Method 150.1 for your information.
   b) Personnel do not write the time of day the samples were taken and/or analyzed. Personnel must add this information to their benchsheets.

3) BOD_5
   a) BOD_5 dilutions must have a Dissolved Oxygen (DO) depletion of at least 2.0 mg/l and 1.0 mg/l of DO remaining at the end of the 5 day incubation period. Dilutions that do not meet this criterion are invalid and should not be used in your DMR calculations. Personnel do not always invalidate these dilutions. Personnel must begin using only valid BOD_5 results in their calculations.
   b) Personnel analyze 24 hour composite samples for BOD_5. Although personnel list the beginning date and time on their benchsheets, they do not list the composite end date and time. Personnel must add this information to their records.

4) TSS
   a) Personnel have been analyzing TSS samples incorrectly. Standard Methods, Method 2540D, requires that the filter and the filter plus the sample both be dried at 103 -105°C for one hour. When doing the filter preparation, personnel dry the filter at 550 °C for 15 minutes, which is the procedure for volatile solids analyses. Personnel must begin doing the filter preparation correctly.
   b) The TSS procedure is written incorrectly in your QA/QC manual.
      i) Personnel did not include the filter preparation step in their procedure, only the analysis of the filter plus sample.
      ii) Personnel do not note that the cycles of drying, cooling and weighing must continue until a constant weight is obtained or until the weight change (gain or loss) is less than 4 % of the previous weight or 0.5 mg, whichever is less.

      Please add these items to your written method and submit to DES for review.
   c) Personnel measure the temperature of their drying oven while the samples are being dried. TSS samples must be dried between 103 – 105 °C for one hour. Most of the TSS drying oven temperatures measured in 2005 were above 105 °C. Personnel must ensure that the procedure is done correctly and that the oven remains within the required temperature range. If the oven temperature has to be adjusted to meet this requirement then this information should be written in your records.
   d) Personnel did not measure the TSS oven temperature between April 1-12, 2005 and August 13-22, 2005. Personnel must ensure that the oven temperature is measured each time a sample is analyzed.
   e) Personnel analyze 24 hour composite samples for TSS. Although personnel list the beginning date and time, they do not list the end date and time of the composite on their benchsheet. Personnel must add this information to their records.

5) E. coli
   a) Personnel have not been doing quarterly split samples with a certified laboratory. Personnel must begin doing these additional quarterly analyses or develop their own QC program to verify that their analyses are accurate.

b) Personnel should clarify in their QA/QC manual that they have a 2 stage incubator which changes temperature automatically from 35 °C to 44.5 °C.
c) On February 16 and 17, 2005 and January 10 and 31, 2006 personnel applied the EPA E. coli counting rules to the final colonies per 100 mls and not to the colonies counted.

6) Laboratory
   a) Once a year, personnel have their laboratory thermometers calibrated against an NIST certified thermometer. The sample refrigerator and the E. coli incubator had not been calibrated since June 1, 2004. Personnel should have these thermometers calibrated immediately, and initiate yearly calibrations, thereafter. Personnel corrected this deficiency by the end of the inspection.

7) Benchsheets and QA/QC manual
   a) Personnel frequently write over or cross off numbers when recording or correcting results. If results can not be written clearly, personnel should draw a single line through the number, write in the correct value, and then initial the correction. Writing over or erasing mistakes is not an acceptable laboratory or QA practice.
   b) Personnel do not always fill in all of the required information on the laboratory benchsheets. Personnel must make sure that each benchsheet is filled out completely and correctly.
   c) The sample locations listed on your benchsheets and in your QA/QC manual are not always correct and/or do not always agree.
      i) The TSS benchsheet and written method lists sample points H and I as the influent and effluent sampling locations, respectively. The sample list in your QA/QC manual lists influent and effluent locations as points G and J, respectively.
      ii) The BOD benchsheet does not list an effluent sampling location, only an influent location - H. Your written method lists sample points H and I as the influent and effluent sample locations, respectively. The sample list in your QA/QC manual lists influent and effluent locations as points G and J, respectively.
      iii) The effluent sample locations for E. coli, pH and Total Residual Chlorine (TRC) are listed as K, "discharge from chlorine contact chamber effluent weir", and J, respectively. These samples should all be taken in the same location.
      iv) The effluent pH location is listed as G in the QA/QC sample method, J in the QA/QC sample location list and "discharge from chlorine contact chamber effluent weir" on your pH benchsheet.
      v) The effluent sample location for E. coli is J in the QA/QC sample location list and K in the QA/QC method description and E. coli benchsheet.
   d) All of the sampling locations are not in the list on Page 1 of your QA/QC plan.
   e) Sample point F is listed as both the TSS effluent grab sample and the pH influent sample location.
   f) Although personnel have a map in their QA/QC plan showing the sample locations, it is not clear where the samples are taken. Personnel should provide a narrative or detailed map showing where the individual sample points A through K are located.

Personnel should correct each of the items listed above and submit corrected benchsheets and QA/QC information to DES.

REPEAT DEFICIENCIES (Noted in October 15, 2004 NPDES inspection – Response Required) If these repeat deficiencies are noted in any subsequent inspection then DES may proceed immediately with formal enforcement action which may include an administrative fine.

8) Hooksett personnel have not been completing their DMRs correctly.
   a) The May 2005 DMR was not postmarked until June 16, 2005.
   b) The BOD and TSS weekly average results were calculated incorrectly in March, May and September 2005.
   c) The monthly average flow was calculated incorrectly in February 2005.
   d) The Frequency of Analysis code for effluent TSS analyses was incorrect in May.
   e) Personnel did not fill in the Units column in the third quarter 2005 WET report.
   f) Hooksett personnel have not been including the TSS results from the WET tests in their DMR calculations for the month in which the WET samples were taken.
   g) Personnel did not explain why one of the September 2005 BOD tests was invalid.
   Personnel submitted corrected DMRs for each deficiency listed above with the exception of f).

Personnel must submit corrected and recertified May and July 2005 DMRs to EPA and DES.

RECOMMENDATIONS/OBSERVATIONS (No Response Required):

1) Hooksett personnel submit a hand-written and a computer generated MOR to DES. Personnel do not have to submit both MORs, only the final correct copy, which is the computer copy.

2) Hooksett personnel use two benchsheets for TSS analyses, one for the filter preparation weighings and one for the filter plus sample weighings and calculations. Personnel may wish to combine these two sheets to avoid confusion and possible calculation errors.

3) EPA E. coli Method 1103.1 was reprinted in 2002 to include the urea substrate pH change from 5.0 $\pm$ 0.2 SU to between 3.0 and 4.0 SU. I have included a copy of the 2002 method with this report

4) 40 CFR 136 was updated by EPA on April 9, 2004. One change in the regulations is that the preservation temperature for bacteria samples has changed from 4 °C to < 10 °C. Personnel should be aware of this change when preserving samples. The updated 40 CFR 136 can be found on the EPA website http://www.epa.gov

CORRECTIVE ACTIONS REQUIRED:

Describe all steps taken to correct the deficiencies identified by the inspector. This description should also include the dates the deficiencies were corrected or the anticipated correction date. If the submitted response is acceptable to DES and the deficiencies are/were not repeat deficiencies and have not resulted in environmental harm, DES will close out the inspection and no further action, other than continued compliance, will be required by the permittee. If DES identifies

repeat deficiencies or deficiencies that result in environmental harm in this or future inspections, DES may proceed immediately with enforcement.

DES requests that you submit your inspection response to DES by **April 10, 2006**. If DES does not receive a signed, complete response within the allowed time frame, DES may proceed with enforcement.

Please mail your inspection response to:

Stephanie Larson
NHDES-WWEB
P.O. Box 95
Concord, NH 03302-0095

If you have any questions concerning this inspection, please call Stephanie Larson at (603) 271-1493.

Sincerely,

COPY

John R. Bush, P.E.
Administrator
Wastewater Engineering Bureau

Enclosures: EPA Water Compliance Inspection Report Form 3560-3
Sample Data Summary Sheet
EPA Method 150.1
EPA E coli counting rules
EPA Method 1103.1 (2002)

cc: DES, WD, WWEB/File
Bruce Kudrick, Superintendent, Hooksett WWTF
Stephanie Larson, Environmental Inspector, WWEB
Margaret Bastien, P.E., WWEB
Gretchen Hamel, Enforcement Coordinator, DES
Joy Hilton, USEPA Water Technical Unit

CERTIFIED MAIL/RRR: 7099 3400 0018 1294 3608